Listing of Claims

1. (Currently Amended) A method for recognizing mobile signals in a wireless code division multiple access system, comprising:

measuring a moving speed of a transmitting end;

measuring a signal-to-noise ratio of a signal from the transmitting end; and

controlling a signal searching process of a receiving end coupled to a base station modem to recognize a signal from the transmitting end, said controlling including:

generating a first control signal for setting a first slot number of a non-coherent accumulator to compensate for the moving speed of the transmitting end;

comparing the signal-to-noise ratio to a predetermined level, [[and]]

generating a second control signal by adjusting the first control signal; and

inputting the second control signal into the non-coherent accumulator, the second control signal changing the first ~~controlling an accumulation~~ slot number to a second slot number of the ~~be set by a~~ non-coherent accumulator to adjust the measured signal-to-noise ratio ~~according to the measured moving speed and~~ based on a result of the comparison.

2. (Previously Presented) The method of claim 1, wherein the transmitting end is user equipment.

3. (Original) The method of claim 1, wherein a Doppler estimator measures the moving speed.

4. (Original) The method of claim 1, wherein a signal to interference ratio estimator measures the signal-to-noise ratio.

5. (Currently Amended) The method of claim 1, ~~wherein controlling the accumulation slot number includes: giving~~ further comprising: setting a weight for ~~to~~ the non-coherent accumulator based on the second control signal ~~when the moving speed is higher than a reference level~~.

6. (Canceled)

7. (Currently Amended) The method of claim 1, ~~wherein controlling the accumulation slot number includes:~~ further comprising: restricting a weight for ~~intended to be given to~~ the non-coherent accumulator based on the second control signal when the signal-to-noise ratio is lower than the predetermined level.

8. (Currently Amended) A method for recognizing signals in a CDMA mobile communication system, comprising:

despreading ~~dispreading~~ a received channel signal and accumulating different components of the despread signal according to coherent multi-slot accumulation, respectively;

squaring each component of the accumulated signals, and adding up the components to an energy value;

accumulating the energy value according to non-coherent multi-slot accumulation;

determining a moving speed of a transmitting end from which said received channel signal is derived;

determining a signal-to-noise ratio of the signal from the transmitting end; and

controlling a signal searching process of a receiving end coupled to a base station modem to recognize the signal from the transmitting end, said controlling including:

generating a first control signal for setting a first slot number for said non-coherent multi-slot accumulation to compensate for the moving speed of the transmitting end;

generating a second control signal by adjusting the first control signal; and

performing said non-coherent multi-slot accumulation based on the second control signal, the second control signal changing the first ~~controlling an accumulation~~ slot number to a second slot number to adjust the measured signal-to-noise ratio ~~set by the non-coherent multi-slot accumulation according to the moving speed and the signal-to-noise ratio~~.

9. (Previously Presented) The method of claim 8, wherein the transmitting end is a user equipment, and the receiving end is a multi-path searcher of the base station modem.

10. (Previously Presented) The method of claim 8, wherein the components of the received channel signal are an in-phase (I) channel signal and a quadrature-phase (Q) channel signal.

11. (Previously Presented) The method of claim 8, wherein a Doppler estimator decides the moving speed of the transmitting end.

12. (Previously Presented) The method of claim 8, wherein determining the moving speed includes determining whether the moving speed of the transmitting end is a first speed or a second speed, wherein the first speed is greater than the second speed..

13. (Original) The method of claim 8, wherein a signal to interference ratio estimator determines the signal-to-noise ratio.

14. (Canceled)

15. (Canceled)

16. (Currently Amended) The method of claim 8 [[14]], wherein, when the moving speed is determined to be higher than a first reference level and the signal-to-noise ratio is higher than a second reference level, [[a]] the second control signal increases the first slot number to the second ~~for increasing the~~ slot number ~~is transmitted to the non-coherent accumulator~~.

17. (Canceled)

18. (Currently Amended) The method of claim 8 [[15]], wherein, when the signal-to-noise ratio is determined to be below a predetermined value, the second control signal increases the first slot number to the second slot number ~~transmitted to a the non-coherent accumulator is compensated~~.

19. (Currently Amended) The method of claim 8 [[15]], wherein the second control signal maintains the second slot number to offset a change produced by the first slot number when the moving speed of the transmitting end is above a first reference level and the signal-to-noise ratio is below a second reference level ~~increases the slot number based on the non-coherent multi-slot accumulation~~.

20. (Canceled)

21. (Canceled)

22. (Currently Amended) An apparatus for recognizing mobile signals in a CDMA mobile communication system, comprising:

a despreader which despreads a received signal into signal components;

a scrambling code generator which generates a scrambling code for use by the despreader;

a Doppler estimator which determines a speed of a mobile terminal which transmitted the received signal, and which generates first control information indicative of a first accumulation slot number based on the speed;

a signal-to-interference ratio estimator which determines a signal-to-noise ratio of the signal received from the mobile terminal, and which generates a second control information by adjusting the first control information, the second control information changing the first accumulation slot number to a second accumulation slot number to adjust the measured signal-to-noise ratio ~~corrects the control information generated by the Doppler estimator based on the signal-to-noise ratio~~;

a coherent accumulator which receives the despread signal components, and accumulates the signal components in slot units;

a squaring circuit which squares each of the signal components accumulated in the coherent accumulator;

an adder which adds size elements extracted by the squaring circuit;

a non-coherent accumulator which accumulates a signal size added by the adder and controls an accumulation slot number based on the second control information ~~speed determined by the Doppler estimator and the corrected control information~~ from the signal-to-interference ratio estimator; and

a memory which stores output signals from the non-coherent accumulator.

23. (Currently Amended) The apparatus of claim 22, wherein the [[the]] despreader despreads the received signal into an in-phase (I) channel signal component and a quadrature-phase (Q) channel signal component.

24. (Previously Presented) The apparatus of claim 22, wherein the Doppler estimator determines the speed of the mobile terminal by determining whether the speed is a first speed or a second speed, wherein the first speed is greater than the second speed.

25. (Canceled)

26. (Currently Amended) The apparatus of claim 22 [[25]], wherein, when the determined moving speed of the mobile terminal is determined to be higher than a reference level, the Doppler estimator transmits the first control information to ~~a first control signal which is corrected by~~ the signal-to-interference ratio estimator to generate the second control

information for increasing the first accumulation ~~a first~~ slot number for ~~by~~ the non-coherent accumulator.

27. (Canceled)

28. (Canceled)

29. (Currently Amended) The apparatus of claim 22 [[28]], wherein, when the signal-to-noise ratio is determined to be below a predetermined value, the signal-to-interference ratio estimator increases ~~compensates for the control signal for increasing~~ the first accumulation slot number to the second accumulation slot number for input into ~~transmitted to~~ the non-coherent accumulator to a fixed slot number.

30. (Previously Presented) The apparatus of claim 22, wherein the coherent accumulator comprises:

a first coherent accumulator which receives an in-phase (I) channel signal component of the received signal; and

a second coherent accumulator which receives a quadrature-phase (Q) channel signal component of the received signal.

31. (Original) The apparatus of claim 22, wherein the squaring circuit comprises:

a first squaring circuit which receives a signal from the first coherent accumulator; and

a second squaring circuit which receives a signal from the second coherent accumulator.

32. (Original) The apparatus of claim 22, wherein the squaring circuit squares each of the signals and outputs energy values.

33. (Original) The apparatus of claim 22, wherein the adder adds energy values and outputs an energy value which is a signal size in a corresponding phase.

34. (Previously Presented) The apparatus of claim 22, wherein the coherent accumulator receives the despread signal components, accumulates the signal components within a slot range by a corresponding pilot symbol value, and re-accumulates the signal components in slot units set by a corresponding control signal from the Doppler estimator.

35. (Canceled)

36. (Currently Amended) The method of claim 1, wherein the second control signal increases the first slot number to the second ~~accumulation~~ slot number ~~is set by the non-coherent accumulator~~ to achieve a desired mean acquisition time for recognizing the signal transmitted from the transmitting end ~~device~~.

37. (Currently Amended) The method of claim 1, wherein the second control signal ~~non-coherent accumulator~~ increases the first ~~accumulation~~ slot number to the second slot number when the signal-to-noise ratio is lower than the predetermined level.

38. (Canceled)

39. (Currently Amended) The method of claim 3 [[38]], wherein the first control signal generated by the Doppler Estimator is indicative of a weight and wherein the second ~~adjusted~~ control signal adjusts the weight based on a result of the comparison of the signal-to-noise ratio to the predetermined level.

40. (Currently Amended) The method of claim 39, wherein the second ~~adjusted~~ control signal adjusts the weight to achieve a desired mean acquisition time of the signal transmitted by the transmitting device.

41. (New) The method of claim 1, wherein the second control signal increases the first slot number to the second slot number to offset a reduction in the signal-to-noise ratio resulting from the first slot number.

42. (New) The method of claim 1, wherein the second control signal increases the first slot number to the second slot number to maintain the signal-to-noise ratio at a substantially constant level.

43. (New) The method of claim 1, wherein the second slot number is set by the second control signal to offset a change produced by the first slot number set by the first control signal.

44. (New) The method of claim 1, wherein the second control signal increases the signal-to-noise ratio above the predetermined level.